

JUN 19 2007

Remarks

1. This Amendment is responsive to the Office Action dated March 23, 2007. Claims 1-6 remain for consideration.

2. Claim 1 is rejected as indefinite. Claim 1 has been amended to state "to augment the response of said fuel cell power plant and said inverter to power transients on said lines by providing power to or removing power from said lines." Reexamination and allowance of amended claim 1 over the -112-2 rejection is respectfully requested.

3-12. Claims 1 and 2 are rejected as obvious over Jungreis, Jungreis et al, and Gyugyi et al. Herewith is the Declaration of Wesley E. Sedlacek, Jr., who is clearly well qualified by education and experience in the field of fuel cells and related arts. Paragraph 4 of the Declaration establishes understanding that the rejection is Jungreis Fig. 3 with the UPS 12 of Fig. 1 wherein the fuel cell and primary DC/AC inverter are substituted for the auxiliary generator 18, and a bi-directional DC/AC converter is substituted for the inverter A1 of Jungreis.

Paragraphs 5-7 of the Declaration discuss what the disclosure of Jungreis really is; paragraph 8 concludes that Jungreis must have a UPS of the type that the static bypass switch S1 is open when the main supply 10 fails, at which time the inverter A1 takes over; and as described with respect to Figs. 2 and 3, if the power remains off, the auxiliary generator 18 is connected to the UPS, through the switch S1, which is once again closed.

Paragraph 5 of the rejection (page 3) alleges that the converter A1 is connected to the three-phase power lines through switch S2 as seen in Fig. 3. Paragraph 11 of the Declaration notes that paragraph 11 of the rejection identifies the three-phase lines as "coupled to the load (14) through switch S2" as shown in Fig. 3. The three-phase lines are therefore the lines extending from the generator 18 to the lower contact of the transfer switch S2 in Fig. 3. The three-phase lines, when connected through the switch S2, are connected to the input to transformer T1 (Fig. 1 of Jungreis).

To connect the inverter A1 to the three-phase lines therefore requires connecting the inverter A1 to the transformer T1. This connection cannot be made through the rectifier DR1 as established as prima facie fact in paragraph 8 of the Declaration.

Paragraph 9 of the Declaration establishes as prima facie fact that if the DC/AC inverter A1 were connected somehow through the primaries of T2 so that it could reach the static bypass switch, the rectifier DR1 would conduct half-waves of power back to the battery and the inverter, thereby distorting the power. Paragraph 9 also establishes as prima facie fact that such a circuit arrangement would never be devised or intended by one skilled in electronics.

Paragraphs 12 and 13 of the Declaration establish as prima facie fact that lines 5-8 of claim 1 require that the energy storage device and bi-directional DC/AC converter be connectable to the same three-phase lines as the fuel cell and primary DC/AC converter; in Jungreis Fig. 1 as modified by Fig. 3, that would require conduction through transformer T2 and interference by the rectifier DR1; and that such an arrangement is not viable. Paragraph 13 also establishes that the requirements of lines 5-8 of claim 1 "cannot be achieved in Jungreis as modified by Jungreis et al and Gyugyi et al, as described in paragraphs 8 and 9 hereinbefore." In other words, the principal reference cannot possibly achieve what is required in the claim, and therefore the entire rejection of claim 1 and all of its dependent claims must fail.

Thus far, this response to the rejection of claims 1 and 2 has assumed that the substitution of the bi-directional/AC converter of Gyugyi et al for the DC/AC inverter A1 of Jungreis is an acceptable substitution. However, claims 14-15 of the Declaration establish that not only there is no suggestion or motivation in either Jungreis or Gyugyi et al to make the substitution, but in fact Gyugyi et al declare that the UPS philosophy is not acceptable to the utility environment, and therefore does not suggest combining its technology with the UPS philosophy disclosed in Jungreis.

More importantly, paragraph 16 of the Declaration establishes as prima facie fact that one skilled in electronics would not suggest a bi-directional converter in the position of Jungreis' inverter A1 because it would then be expected to take AC power from its T2 primary and provide DC power to the DC bus. But one skilled in electronics would not make such a substitution. Therefore, there are two reasons why this rejection must fail: first, even if there were a bi-directional DC/AC converter in the position of Jungreis' inverter A1, that could not provide power to the three-phase lines between the storage device and S2; second, one

skilled in the art would not make the substitution because the rectifier DR1 is supplying the energy to the battery and a bi-directional device would be taking AC power from the primary of T2.

Thus, one skilled in electronics art would not make the substitution of a bi-directional converter for the inverter A1 of Jungreis, and even if one did, it could not provide power to the three-phase lines.

Paragraph 18 of the Declaration establishes as prima facie fact that Gyugyi et al does not suggest to one skilled in electronics that the bi-directional DC/AC converter should be connected in a manner to avert lapses of power as called for in claim 2 of the subject application.

Claim 3 is not rejected along with claims 1 and 2. However, it is mentioned in paragraph 12 of the rejection. In order to provide compact prosecution, applicant will consider that claim 3 was rejected along with claims 1 and 2 on the same three references. Paragraph 19 of the Declaration establishes as prima facie fact that Jungreis, as modified in the rejection, cannot meet lines 4-5 of claim 3, which requires connectability to either the three-phase lines or the grid.

For all of the foregoing reasons, reconsideration and allowance of claims 1-3 over Jungreis, Jungreis et al, and Gyugyi et al is respectfully requested.

13-17. Claims 4 and 6 are rejected as obvious over the three previous references in further view of Hochgraf et al. Paragraph 20 of the Declaration establishes as prima facie fact that since Hochgraf replaces a DC/DC converter with the diode, which carries power all of the time, it cannot suggest using a diode in addition to a DC/AC inverter and a bi-directional DC/AC converter. Paragraph 20 also establishes that it is unconventional to provide the diode of claim 4 in addition to the DC/AC inverter and the DC/AC converter. Therefore, reconsideration and allowance of claims 4 and 6 over the four references is respectfully requested.

18-22. Claim 5 is rejected as obvious over the four references referred to hereinbefore in further view of Early et al. Paragraph 21 of the Declaration establishes as prima facie fact that the switches 102, 104 totally isolate the battery and the fuel cell from the system of Early et al, and do not suggest a switch in series with a diode that would not


isolate either the fuel cell or the storage unit from the system. Therefore, reconsideration and allowance of claim 5 is respectfully requested.

It is to be noted that claims 2-5 are patentable as depending from claim 1, and it has been shown that claim 1 cannot read on the modified version of Jungreis because Jungreis cannot conduct from the position of inverter A1 back to the three-phase lines at the output of the generator 18, and one skilled in electronics would not substitute a bidirectional inverter for Jungreis' inverter A1.

23. It is agreed that King et al is less relevant than the references referred to hereinbefore.

24. To save the Examiner considerable time when this case is taken up, a short phone call is recommended should any issue herein still be unresolved. A few minutes on the phone could clarify a point, or result in a supplemental response which would further limit or dispose of issues. A five minute phone call can save the Examiner a lot of work. Such a phone call would be deeply appreciated.

Respectfully submitted,



M. P. Williams

Attorney of Record

Voice: 860-649-0305

Fax: 860-649-1385

E-mail: [mw@melpat.com](mailto:mw@melpat.com)

210 Main Street  
Manchester, CT 06042  
Date: June 13, 2007.